

**Abstract**

The present invention provides for a method and apparatus for acquiring cardiac images having minimized motion artifact by triggering an image-acquisition scan at a point during the quiescent segment of each cardiac cycle. The method of the present invention

5 comprises: measuring the length of the R-R interval of a cardiac cycle; calculating the R-T segment length based on gender and R-R interval length; identifying an optimal scan starting point of the cardiac cycle based on R-R interval length, R-T segment length and scan speed; and triggering the image-acquisition scan at this starting segment. The method is implemented by an apparatus, namely a cardiac imaging device that has image-

10 acquisition speeds of about 15-300 ms. The apparatus comprises a transmitter that generates the image-acquisition signal, an input console, and an ECG gating device that synchronizes the trigger of image-acquisition scans with the starting points determined by the above method.